

## AN ANNOTATED KEY TO THE MYSIDACEA OF THE NORTH CENTRAL GULF OF MEXICO

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**ABSTRACT** An annotated key is provided to 17 species in 11 genera of the order Mysidacea from the north central Gulf of Mexico. All species are illustrated. The occurrence of *Bowmaniella dissimilis* is reviewed in light of Holmquist's (1975) renaming of *B. dissimilis sensu* Brattegard (1970). Reports of several species of *Metamysidopsis* are discussed. The possible hybridization of two species of *Taphromysis* is considered.

### INTRODUCTION

With the exception of the decapod crustaceans, few comprehensive keys exist to the estuarine and marine invertebrate fauna of the north central Gulf of Mexico. Expansion of research efforts in the fields of ecology, fisheries biology and toxicology have increased the need for basic systematic reviews of many invertebrate groups. The authors intend to publish a series of illustrated keys to selected groups of Crustacea that will facilitate identification of local fauna. All descriptions and illustrations in the following key represent original work, with the exception of Figure 1.

Peracaridans of the order Mysidacea are small shrimp-like organisms found in a variety of habitats. They may be part of the benthos, meroplankton or holoplankton, but most are typically hypoplanktonic. The majority of the species

are neritic, with both freshwater and marine representatives known.

A side and dorsal view of a typical mysid is illustrated in Figure 1. The thorax is covered by a carapace which is not united with the last four thoracic segments. The first thoracic segment is united with the head. Anteriorly, the carapace may project into a rostrum. The antennules are biramous. The antenna has a large scale-like exopod. The eyes are usually stalked, but in the genus *Pseudomma*, they are fused into an ocular plate that extends across the anterior margin of the carapace. The mouthparts consist of a pair of mandibles and two pairs of maxillae.

The first, and occasionally the second, pair of thoracic appendages may be modified as maxillipeds. The six or seven remaining thoracic appendages are biramous with filamentous exopods that sometimes bear swimming setae; some may have subchelate endopods. In the females, two or three

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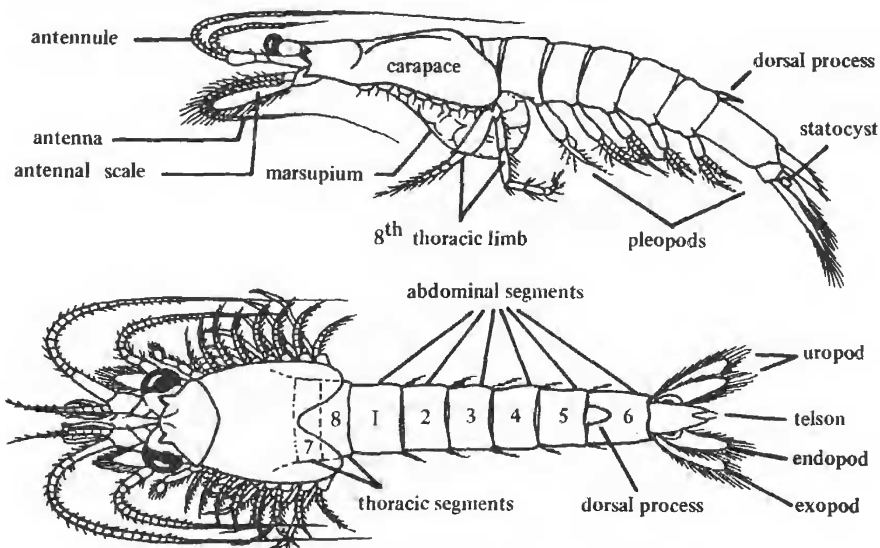


Figure 1. Side and dorsal view of a typical mysid (modified from Smith, 1964).

pairs of oostegites form a subthoracic marsupium to brood eggs.

Mysids are sexually dimorphic. The abdominal appendages or pleopods are rudimentary in females and developed in males. In the genus *Bowmaniella* these abdominal appendages are distinctive, with the third pleopod of the male bearing a large, complex copulatory organ.

A pair of biramous uropods are located on either side of

the telson, with the inner ramus bearing a bead-like statocyst.

Many mysidaceans are filter feeders and some species use the second maxilla to produce a current and trap food; others are carnivores. A few forms are scavengers.

Neritic and marine species often occur in large swarms and provide valuable forage for many fish.

To date, about 460 species have been reported throughout the world.

KEY TO THE MYSIDACEA OF THE NORTH CENTRAL GULF OF MEXICO

- 1. Eyes fused, forming a large ocular plate extending across anterior margin of carapace (Fig. 2e) . . . . . *Pseudomma* sp. (Page 233)
- Eyes not fused into an ocular plate, supported on separate eyestalks. . . . . 2
- 2. Distal end of telson emarginate (slightly indented), concave or deeply cleft (Fig. 5a-d, g, i, k, l, p-s) . . . . . 3
- Distal end of telson convex, linguiform in appearance, without terminal cleft or emargination (Fig. 5f, h, j, m-o) . . . . . 11
- 3. Antennal scale with lateral tooth present (though sometimes minute), devoid of setae on outer margin (Fig. 3a-d, f) . . . . . 4
- Antennal scale without lateral tooth, setae present on both inner and outer margins (Fig. 3g, i, k, o-q) . . . . . 6
- 4. Each apical lobe of telson armed with 1 large spine (Fig. 5a); antennal scale small and rounded in appearance; sympod of antennal peduncle with large barbed projection on its inner distal corner (Fig. 3a) . . . . . *Anchialina typica* (Page 227)
- Each apical lobe of telson armed with 2 large spines (Fig. 5b-d); antennal scale of moderate size, more elongate; sympod of antennal peduncle without large barbed projection on its inner distal corner . . . . . 5
- 5. Posterior margin of fifth abdominal segment with dorsal process (Fig. 1); outer uropod armed with 18 or more lateral spines; inner uropod armed with 5 or more large spines along medial margin, without small spines near statocyst (Fig. 4c, d) . . . . . *Bowmaniella* spp. (Page 232)
- (*Bowmaniella brasiliensis* and *Bowmaniella floridana*)
- Posterior margin of fifth abdominal segment without dorsal process; outer uropod armed with 16 or less lateral spines; inner uropod armed with 3 or 4 large spines along medial margin, 5 to 7 small spines near statocyst (Fig. 4b) . . . . . *Bowmaniella portoricensis* (Page 227)
- 6. Terminal cleft or emargination devoid of spines on its inner margins (Fig. 5g, k, l) . . . . . 7
- Terminal cleft or emargination armed with spines or laminae (flat spine-like projections) (Fig. 5i, p-s) . . . . . 8
- 7. Proximal one fourth of lateral margin of telson unarmed; terminal cleft moderately deep (Fig. 5g) . . . . . *Promysis atlantica* (Page 234)
- Entire lateral margin of telson armed with spines; distal end with shallow emargination between large inner pair of spines (Fig. 5k, l) . . . . . *Mysidopsis furca* (Page 235)
- 8. Lateral margin of telson armed with 8 to 20 spines (Fig. 5p-s) . . . . . 9
- Lateral margin of telson armed with 25 or more spines (Fig. 5i) . . . . . *Bathymysis reniculata* (Page 235)
- 9. Proximal half of lateral margin of telson devoid of spines (Fig. 5p); inner uropod bearing 15 or more spines along medial margin (Figure 4o) . . . . . *Heteromysis formosa* (Page 237)
- Entire margin of telson bearing spines (Fig. 5q-s); inner uropod bearing 1 spine along medial margin (Fig. 4p-r) . . . . . 10

10. Anterior margin of carapace with small lateral spine just below base of eyestalk (Fig. 2p) . . . . . *Taphromysis louisianae* (Page 237)  
 Anterior margin of carapace without lateral spine (Fig. 2q) . . . . . *Taphromysis bowmani* (Page 237)
11. Antennal scale with lateral tooth (Fig. 3f); terminal portion of telson armed with several large spines on each lateral corner and 3 very small spines medially (Fig. 5f) . . . . . *Siriella thompsonii* (Page 234)  
 Antennal scale without lateral tooth (Fig. 3h, j, l-n); apex of telson variously armed with 2 or more spines (Fig. 5h, j, m-o) . . . . . 12
12. Antennal scale more than 12 times long as wide (Fig. 3n); distal half of telson armed with 40 or more spatulate spines (Fig. 5o) . . . . . *Brasilomysis castroi* (Page 236)  
 Antennal scale 8 or less times long as wide (Fig. 3h, j, l, m); lateral margins of telson armed with nonspatulate spines (Fig. 5h, j, m, n) . . . . . 13
13. Proximal two thirds of lateral margins of telson devoid of spines; apex armed with 1 pair of spines slightly longer than laterals (Fig. 5h) . . . . . *Metamysidopsis swiftii* (Page 234)  
 Entire lateral margin of telson armed with spines; apex armed with 2 or more pairs of spines distinctly longer than laterals (Fig. 5j, m, n) . . . . . 14
14. Apex of telson armed with 8 or more long spines (Fig. 5m, n); inner uropods with 3 or less (rarely 4) spines near statocyst (Fig. 4l, m) . . . . . 15  
 Apex of telson armed with 6 or less long spines (Fig. 5j); inner uropods with 4 or more spines near statocyst (Fig. 4j) . . . . . *Mysidopsis bigelowi* (Page 235)
15. Apex of telson with 12 to 16 long spines gradually increasing in length to the midline (Fig. 5n); inner uropod with 1 spine near statocyst (Fig. 4m) . . . . . *Mysidopsis almyra* (Page 236)  
 Apex of telson with 8 to 12 long spines abruptly increasing in length to the midline (Fig. 5m); inner uropod with 2 or more spines near statocyst (Fig. 4l) . . . . . *Mysidopsis bahia* (Page 236)

**ANCHIALINA TYPICA (KRØYER, 1861)***Description*

**Carapace** - Rectangular in appearance, anterior dorsal margin a broad rostral plate, the distal end appearing flat and covering entire base of eyestalks. Posterior dorsal margin slightly concave, covering all thoracic segments (Figure 2a).

**Antennal peduncle and scale** - Scale very small, about 1.8 times as long as wide at its midlength, rhomboidal in appearance; lateral margin straight, devoid of setae, ending in minute tooth; apex and inner margin broadly rounded, bearing setae, distal tip with faint suture. Second segment of peduncle massive, about 3.5 times as long as third segment and 1.2 times as long as scale. Inner distal margin of sympod with long curved projection bearing barbs on inner margin, outer distal corner with small tooth (Figure 3a).

**Uropods** - Exopods about 0.8 times as long as telson and slightly shorter than endopods; lateral margins usually bearing a row of about 18 spines, increasing in length to the larger inwardly curved distal spines, setae present along inner margin. Endopods slightly longer than telson, bearing patterned row of 45 to 50 spines of variable length, the distal 2 spines being longest, both inner and outer margins bearing setae (Figure 4a).

**Telson** - Rather long, about 2.7 times maximum width; distal end with deep cleft bearing 30 to 40 slender laminae, increasing in length to apical lobes; lateral margins straight, distal one fourth curving slightly inward, proximal one fifth unarmed, remainder bearing 25 to 35 spines of variable length which tend to be more concentrated and longer distally; each apical lobe bearing 1 large straight spine (Figure 5a).

**Other characters** - General appearance distinctly stout and robust. Integument covered with many minute hairs concentrated on dorsal surfaces of antennae, uropods and telson. First pair of pleopods in males uniramous, all others biramous. Third male pleopod with long 11-segmented exopod bearing modified setae. All pleopods of females reduced to uniramous plates.

**Length** - Adult males to 5.8 mm and females to 5.0 mm.

**Ecology** - Polyhaline, hypoplanktonic.

**BOWMANIELLA PORTORICENSIS BĂCĂSCU, 1968***Description*

**Carapace** - Anterior dorsal margin a long, slender, acutely pointed rostrum descending somewhat between the eyes and reaching cornea. Posterior dorsal margin deeply concave,

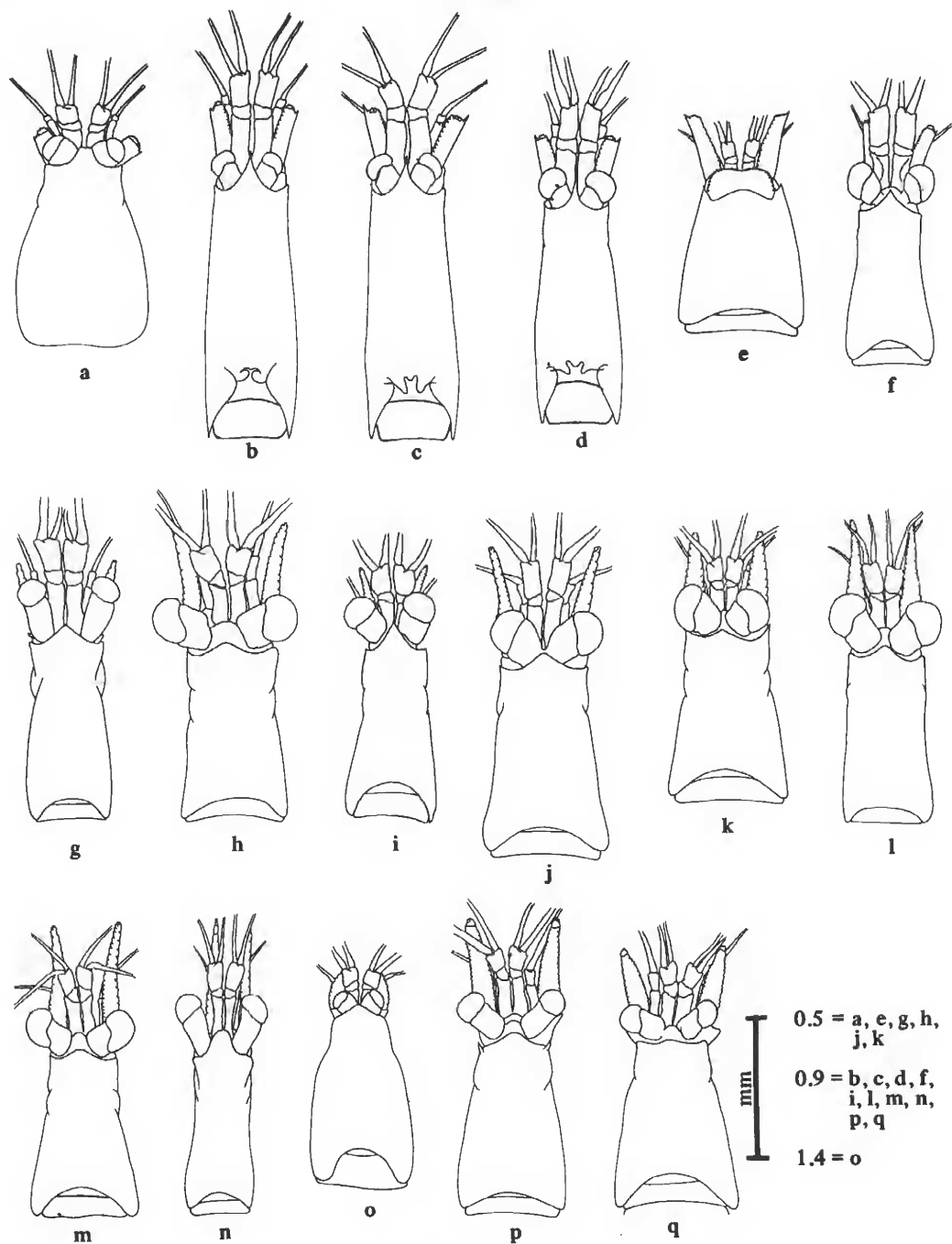


Figure 2. Carapace: (a) *Anchialina typica*, (b) *Bowmaniella portoricensis*, (c) *Bowmaniella floridana*, (d) *Bowmaniella brasiliensis*, (e) *Pseudomma* sp., (f) *Siriella thompsonii*, (g) *Promysis atlantica*, (h) *Metamysidopsis swifti*, (i) *Bathymysis renoculata*, (j) *Mysidopsis bigelowi*, (k) *Mysidopsis furca*, (l) *Mysidopsis bahia*, (m) *Mysidopsis almyra*, (n) *Brasilomysis castroi*, (o) *Heteromysis formosa*, (p) *Taphromysis louisianae*, (q) *Taphromysis bowmani*.



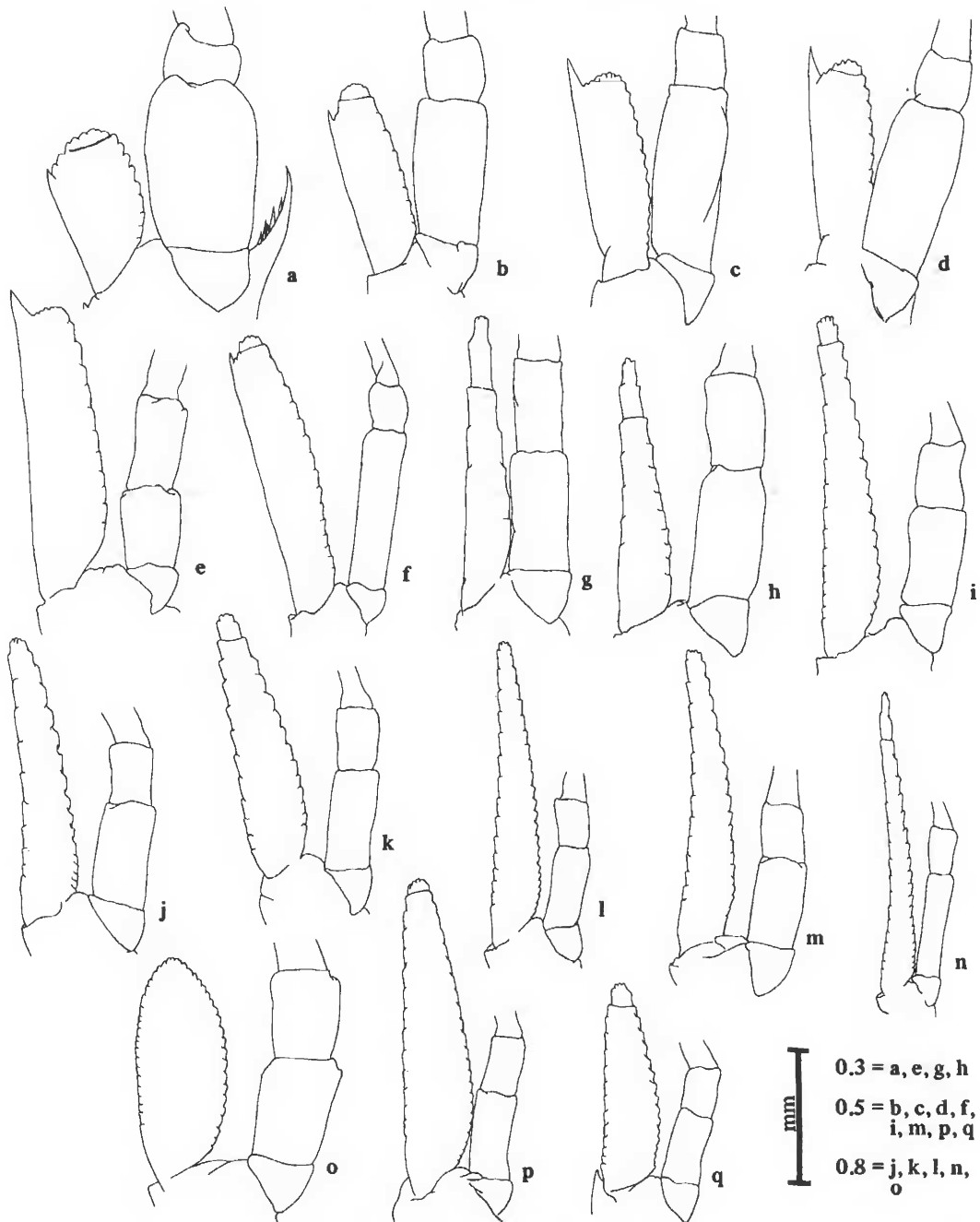


Figure 3. Antennal peduncle and scale: (a) *Anchialina typica*, (b) *Bowmaniella portoricensis*, (c) *Bowmaniella floridana*, (d) *Bowmaniella brasiliensis*, (e) *Pseudommu* sp., (f) *Siriella thompsonii*, (g) *Promysis atlantica*, (h) *Metamysidopsis swifti*, (i) *Bathymysis renoculata*, (j) *Mysidopsis bigelowi*, (k) *Mysidopsis furca*, (l) *Mysidopsis bahia*, (m) *Mysidopsis almyra*, (n) *Brasilomysis castrol*, (o) *Heteromysis formosa*, (p) *Taphromysis louisianae*, (q) *Taphromysis bowmani*.

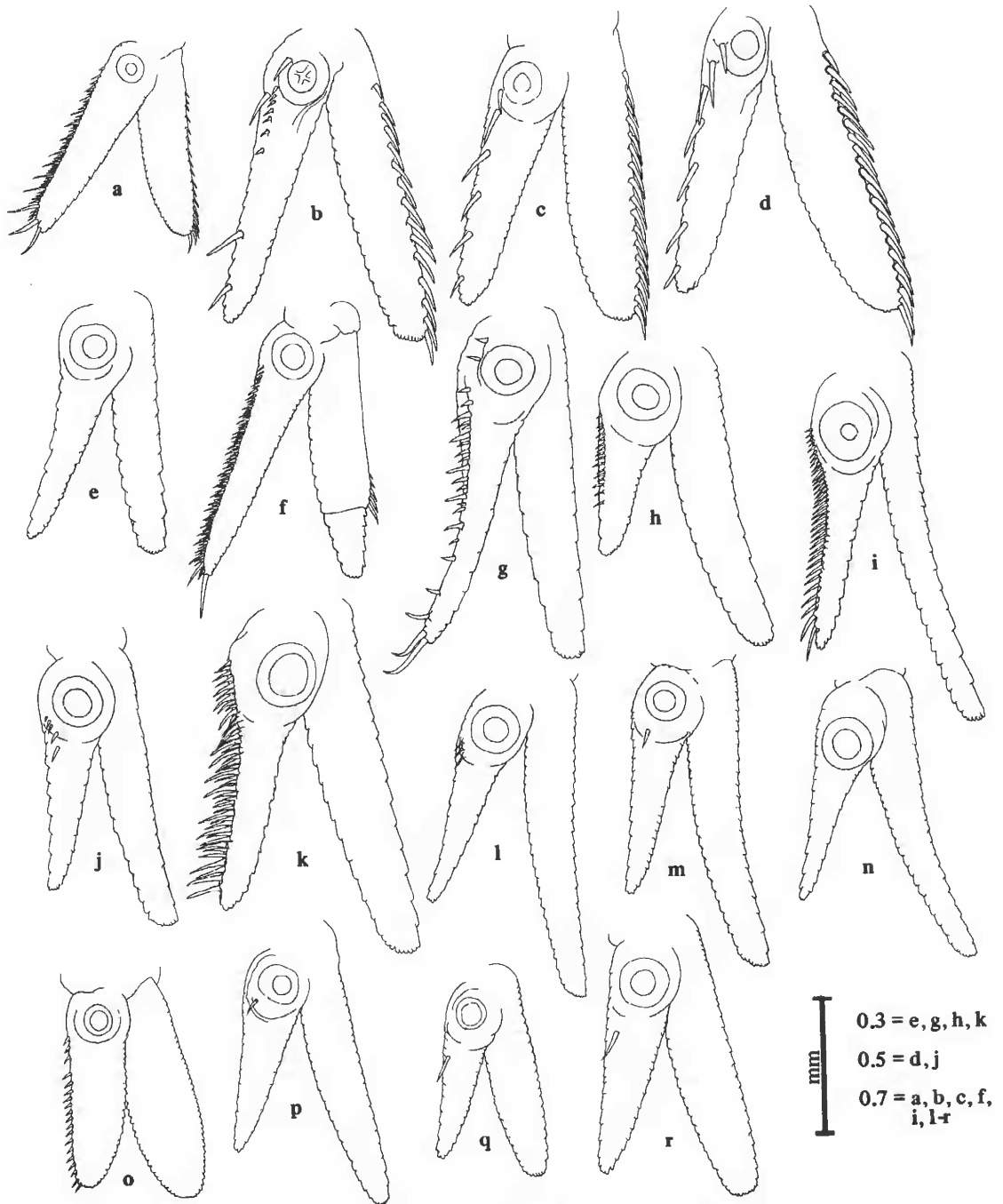


Figure 4. Uropod: (a) *Anchialina typica*, (b) *Bowmaniella portoricensis*, (c) *Bowmaniella brasiliensis*, (d) *Bowmaniella floridana*, (e) *Pseudomma* sp., (f) *Siriella thompsonii*, (g) *Promysis atlantica*, (h) *Metamysidopsis swifii*, (i) *Bathymysis renoculata*, (j) *Mysidopsis bigelowi*, (k) *Mysidopsis furca*, (l) *Mysidopsis bahia*, (m) *Mysidopsis almyra*, (n) *Brasilomysis castroi*, (o) *Heteromysis formosa*, (p) *Taphromysis louisianae*, (q) *Taphromysis bowmani*, (r) *Taphromysis bowmani*, intermediate form.

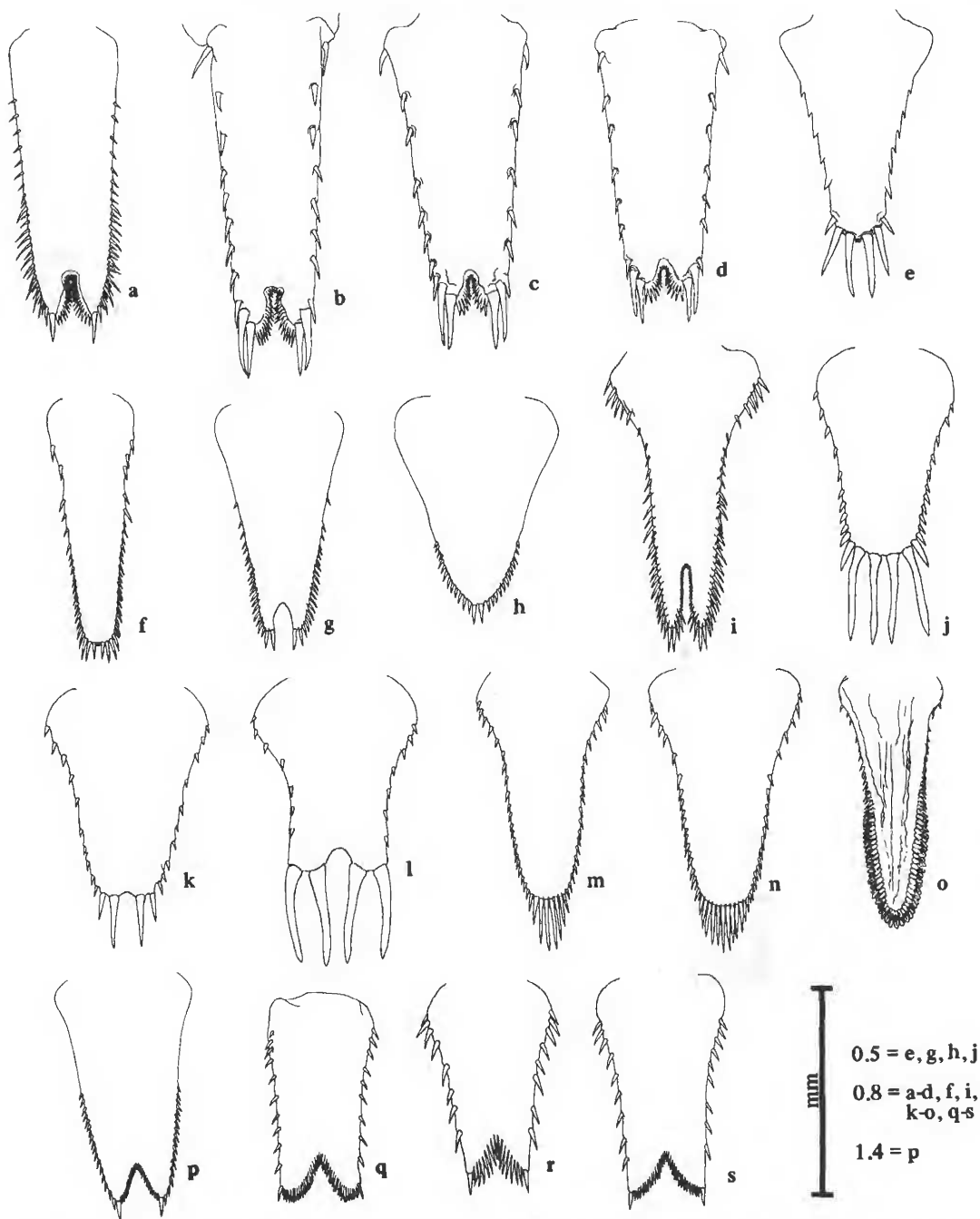


Figure 5. Telson: (a) *Anchialina typica*, (b) *Bowmaniella portoricensis*, (c) *Bowmaniella floridana*, (d) *Bowmaniella brasiliensis*, (e) *Pseudomma* sp., (f) *Siriella thompsonii*, (g) *Promysis atlantica*, (h) *Metamysidopsis swifti*, (i) *Bathymysidopsis reniculata*, (j) *Mysidopsis bigelowi*, (k) *Mysidopsis furca*, male, (l) *Mysidopsis furca*, female, (m) *Mysidopsis bahia*, (n) *Mysidopsis almyra*, (o) *Brasiliomys castroi*, (p) *Heteromysidopsis formosa*, (q) *Taphromysidopsis louisianae*, (r) *Taphromysidopsis bowmani*, (s) *Taphromysidopsis bowmani*, intermediate form.

bearing 2 oval-shaped lobes that form a slight sulcus, seventh and eighth thoracic segments exposed dorsally (Figure 2b).

**Antennal peduncle and scale** — Scale about 3.2 times as long as wide at its midlength, faint suture separating distal tip of apex; lateral margin devoid of setae, ending in small distal tooth not extending beyond apex of scale; inner margin and apex setose. Third segment of peduncle about 0.4 times as long as second; entire peduncle about 1.3 times as long as scale (Figure 3b).

**Uropods** — Exopods subequal in length with endopods bearing a row of 13 to 16 large spines on outer margin, inner margin setose. Inner margin of endopods bearing 3 or 4 large spines extending from area of statocyst to distal tip; row of 5 to 7 small spines extending distally from inner margin of statocyst; both inner and outer margins setose (Figure 4b).

**Telson** — Cleft and rectangular in appearance, about 3.0 times as long as wide at its midlength; lateral margins nearly straight, bearing 6 to 9 spines; each apical lobe with a pair of large spines. Terminal cleft relatively deep, about 0.14 times total length of telson, each inner margin bearing 14 to 17 spinules (Figure 5b).

**Other characters** — Third pleopod of male bearing a large, complex copulatory organ on its distal end. All pleopods of females reduced to uniramous plates.

**Remarks** — The copulatory organ is similar to that of *B. floridana* in having a large striated lobe distally, but lacks the membranous accessory lobe. This species is easily distinguished from *B. brasiliensis* by the lack of the hook-like terminal apophysis and the presence of a striated lobe distally.

The illustrations and description presented here are in general agreement with the original description by Băcescu (1968) with some exceptions. Băcescu reported the number of lateral spines on the telson to be 7 for females and 4 to 5 for males. Females examined by the authors from the northern Gulf of Mexico have 7 to 9 lateral spines on the telson, males 6 to 7. The depth of the terminal cleft was also slightly less in our specimens.

**Length** — Mature males to 9.0 mm and females to 11.0 mm.

**Ecology** — Hypoplanktonic, streamlined modified body adapted for burrowing in sand substrates. Polyhaline, not known from estuarine habitats.

#### BOWMANIELLA SPP.

Reliable separation of *B. floridana* and *B. brasiliensis* is based on the structure of the distal complex of the male third pleopod. Females and immature males of these two species are, for all practical purposes, impossible to separate and are therefore treated together in the following description.

#### Description

**Carapace** — Anterior dorsal margin a long, slender, acutely pointed rostrum extending to cornea of eye. Posterior

dorsal margin deeply concave, forming an M-shaped sinus with 1 small median and 2 larger lateral lobes, seventh and eighth thoracic segments exposed dorsally (Figure 2c, d).

**Antennal peduncle and scale** — Scale about 3.5 times as long as wide at its midlength, faint suture separating distal tip of apex; lateral margin devoid of setae, ending in large distal tooth extending well beyond apex of scale; inner margin and apex setose. Third segment of peduncle about 0.3 times as long as second segment; entire peduncle equal to or slightly longer than scale (Figure 3c, d).

**Uropods** — Exopod about 1.2 times as long as endopod and bearing row of about 15 to 21 strong, evenly spaced spines along lateral margin; inner margin setose. Inner margin of endopod bearing 4 to 7 large spines extending from area of statocyst to distal tip; both inner and outer margins setose (Figure 4c, d).

**Telson** — Cleft and rectangular in appearance, about 2.7 times as long as wide at its midlength; lateral margins nearly straight, bearing 6 to 8 spines; each apical lobe bearing 1 pair of large spines. Depth of cleft about 0.12 times entire length of telson, each inner margin with about 12 to 15 spinules (Figure 5c, d).

**Other characters** — Posterior dorsal margin of fifth abdominal segment with articulated process (Figure 1) in both *Bowmaniella floridana* and *B. brasiliensis*, this process lacking in *B. portoricensis*.

#### BOWMANIELLA FLORIDANA HOLMQUIST, 1975

#### Description

**Third pleopod of male** — Copulatory organ large and complex. Terminal lobular complex composed of a large striated lobe and a smaller accessory lobe. Outer stylet slightly curved, smooth and pointed. Apical claw slightly curved, indented, bearing a row of curved spines. Parapical claw also curved, laminated and bearing many spines (Figure 6).

**Remarks** — Brattegard (1970) included the northern Gulf of Mexico in the known range for *B. dissimilis* (Coifmann, 1937). Holmquist (1975) stated that Brattegard's illustrations are of specimens which do not belong to *B. dissimilis*, but to a new species, *B. floridana*. Examination of a large number of specimens of this type from the northern Gulf of Mexico revealed agreement with Holmquist's *B. floridana* (= *B. dissimilis sensu* Brattegard, 1970) with one exception. Brattegard stated, "bow absent" from male copulatory organ and Holmquist made no mention of such a bow. All specimens of *B. floridana* from the present study clearly possess a bow (Figure 6). Either Brattegard overlooked the bow or the specimens illustrated herein represent a new species. These differences are currently under investigation by Thomas E. Bowman of the United States National Museum.

*Gastrosaccus dissimilis* Coifmann, 1937, was originally described off the coast of Brazil between Pernambuco and

Rio de Janeiro. Brattegard (1970) considered *Bowmaniella dissimilis* conspecific with both *Gastrosaccus dissimilis* and *Bowmaniella (Coifmanniella) dissimilis sensu* Băcescu, 1968. Tattersall (1951) reported *G. dissimilis* from the Louisiana Gulf coast; however, his illustration of the male third pleopod (fig. 29, p. 97) differs greatly from that of Coifmann (1937) (fig. 3c, p. 7). While Tattersall's illustration lacks detail, it is very similar to the male third pleopod of our specimens of *B. floridana* (Figure 6). No specimens of *B. dissimilis* were identified from our samples, suggesting that previous records for this species in the study area may be *B. floridana*. Bowman (personal communication) indicated that many published records of *B. dissimilis* are probably *B. floridana*; however, a reexamination of these specimens will be necessary to validate this assumption.

**Length** — Adult males to 8.0 mm and females to 10.0 mm.

**Ecology** — Hypoplanktonic, common in estuarine waters.

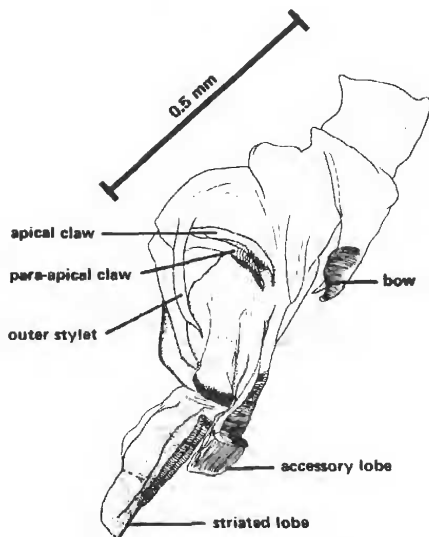


Figure 6. Copulatory organ, *B. floridana*.

**BOWMANIELLA BRASILIENSIS BĂCESCU, 1968**

**Description**

**Third pleopod of male** — Copulatory organ smaller than that of *B. floridana*, lacking a large terminal lobular complex. Terminal apophysis descending from a hook-like seizing device. Inferior stylet developed into a long membranous lamina. Para-apical claw strongly curved upward, lower margin indented and bearing a row of slender spines. Apical claw long, slender and curving downward, bearing a few scattered spines (Figure 7).

**Remarks** — Băcescu (1968) has referred to Coifmann's (1937) illustration of the male third pleopod (fig. 3c, p. 7) of *Gastrosaccus dissimilis* as being somewhat similar to his

drawing (fig. 6d, p. 366) of *B. brasiliensis*. Coifmann's illustration clearly shows a slender apical claw which curves downward, an upward curving para-apical claw and a terminal apophysis. These structures are also in general agreement with Băcescu's detailed illustration (fig. 5b, p. 364) of the male copulatory organ; however, the identification of the para-apical and apical claw were apparently reversed. The taxonomic status of *B. brasiliensis* should be examined in light of these similarities.

*Bowmaniella brasiliensis* is a fairly common species, often taken with *B. floridana*. The lack of published reports of this species from other Gulf states suggests that it may have been included under the name *B. dissimilis*.

**Length** — Adult males to 8.0 mm and females to 10.0 mm.

**Ecology** — Hypoplanktonic, common in estuarine waters.

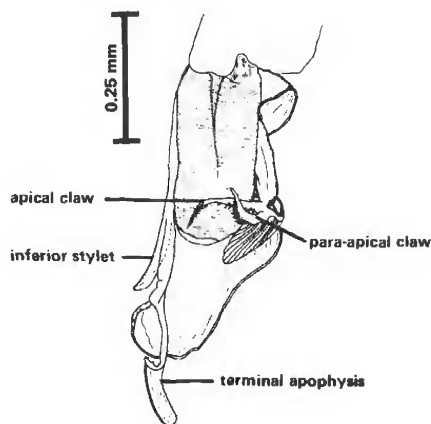


Figure 7. Copulatory organ, *B. brasiliensis*.

**PSEUDOMMA SP.**

**Description**

**Carapace** — Rectangular in appearance, lacking rostrum. Eyes fused, forming an ocular plate extending across anterior margin of carapace. Posterior dorsal margin strongly concave, exposing seventh and eighth thoracic segments (Figure 2e).

**Antennal peduncle and scale** — Scale with setae along inner margin, outer margin lacking setae and terminating in large tooth. Third segment of peduncle about 1.2 times as long as second segment, extending two thirds of the distance along scale (Figure 3e).

**Uropods** — Exopods about 1.25 times as long as telson, subequal in length to endopods. Both endopods and exopods bearing setae along inner and outer margins, devoid of spines (Figure 4e).

**Telson** — Linguiform, entire, about 3.0 times as long as wide at its midlength; apex armed with 2 pairs of large spines, smaller pair laterally; lateral margins with 5 to 7 sharply pointed serrations (Figure 5e).

**Remarks** — The species appears to be undescribed. Specimens do not key to any of the recognized species of *Pseudomma* (Bowman, personal communication). Description awaits collection of male specimens.

*SIRIELLA THOMPSONII* (H. MILNE-EDWARDS, 1837)

**Description**

**Carapace** — Anterior dorsal margin an acutely pointed rostral plate, partly covering the base and extending between eyestalks. Posterior margin concave, loose, exposing eighth and part of seventh thoracic segments (Figure 2f).

**Antennal peduncle and scale** — Scale about 5.5 times as long as wide at its midlength; lateral margin straight, devoid of setae, ending in tooth; apex rounded, extending past lateral tooth; inner margin and apex setose. Second segment of peduncle long and slender, about 4.0 times as long as third segment; entire peduncle about 0.8 times as long as scale (Figure 3f).

**Uropods** — Exopods about 1.2 times as long as telson and slightly shorter than endopods; proximal three fourths of lateral margin devoid of setae and separated from distal one fourth by suture, a row of 3 to 6 graduated spines, increasing in length distally, located anterior to suture; outer margin of distal segment and entire inner margin setose. Endopod bearing row of about 70 spines of unequal size and irregular arrangement, extending from statocyst to apex, which bears a single large spine; both inner and outer margins setose (Figure 4f).

**Telson** — Slender, about 2.8 times as long as maximum width; distal end rectangular in appearance, armed with 3 pairs of long spines on corners, 3 much smaller spines and a pair of plumose setae medially; lateral margins nearly straight, except for slightly concave area along proximal one third; about 25 spines of variable size and spacing extend from about proximal one fifth to distal end (Figure 5f).

**Other characters** — Endopods of thoracic limbs elongate, terminating in "brush" of stiff setae. First pleopod of male with well-developed exopod and a bi-lobed (pseudobranchial) process, lacking a well-developed endopod. Pleopods 2 through 5 with both exopods and endopods well-developed and bearing coiled, bi-lobed pseudobranchiae. All pleopods of females reduced to uniramous plates.

**Length** — Adult males to 6.5 mm and females to 5.7 mm.

**Ecology** — Polyhaline, planktonic.

*PROMYSIS ATLANTICA* TATTERSALL, 1923

**Description**

**Carapace** — Anterior dorsal margin a broad, bluntly pointed rostral plate which covers and extends past base of eyestalks. Posterior dorsal margin concave, exposing eighth and part of seventh thoracic segments (Figure 2g).

**Antennal peduncle and scale** — Scale about 8.0 times as long as wide at its midlength, bearing a few setae along both

margins, lacking a lateral tooth; distal one fourth divided from remainder of scale by a suture. Third segment of peduncle about 0.7 times as long as second segment; entire peduncle about 0.8 times as long as scale (Figure 3g).

**Uropods** — Exopods about 1.8 times as long as telson and slightly longer than endopods, setose along both margins. Endopods curving inward toward telson, inner margin bearing a row of about 24 spines of variable size and spacing extending from statocyst to distal tip; apex bearing 2 strong curved spines, much longer than others; both inner and outer margins setose (Figure 4g).

**Telson** — About 1.8 times as long as maximum width, terminal notch devoid of setae or spines; lateral margins relatively straight, devoid of spines on proximal one fourth, distal three fourths armed with 18 to 23 spines of about equal size; each apical lobe with 2 spines, slightly longer than lateral spines (Figure 5g).

**Other characters** — General body form slender, abdomen appears very elongate with sixth segment twice as long as fifth segment. Pleopods of males biramous, endopod of pleopod 1 rudimentary, exopod of pleopod 4 bearing a long barbed seta. All pleopods of females reduced to uniramous plates.

**Length** — Adult males and females to 8.0 mm.

**Ecology** — Polyhaline, planktonic, sometimes found in large aggregations.

*METAMYSIDOPSIS SWIFTI* BĂCESCU, 1969

**Description**

**Carapace** — Anterior dorsal margin a broadly triangular, bluntly pointed, rostral plate extending just beyond base of eyestalks. Posterior dorsal margin concave, exposing eighth thoracic segment (Figure 2h).

**Antennal peduncle and scale** — Scale about 7.5 times as long as wide at its midlength, suture separating distal one fifth, setose along both margins, lacking lateral tooth. Third segment of peduncle about 0.8 times as long as second segment; entire peduncle shorter than scale (Figure 3h).

**Uropods** — Exopod about 1.8 times as long as telson and 1.4 times as long as endopod, outer margin slightly concave, setose along both margins. Inner margin of endopod bearing row of 14 to 21 spines of unequal size extending from area of statocyst distally along proximal two thirds; both inner and other margins setose (Figure 4h).

**Telson** — Broadly linguiform with rounded apex; proximal two thirds devoid of spines, distal one third of each margin bearing 11 to 15 spines of about equal size and spacing lateral to a longer pair of midapical spines (Figure 5h).

**Other characters** — All pleopods of males biramous, endopod of first pleopod rudimentary, exopod of fourth pleopod 6-segmented and bearing a long barbed seta off terminal segment. All pleopods of females reduced to uniramous plates.

**Remarks** — A certain confusion exists in the literature on the occurrence of several species of *Metamysidopsis* from northern Gulf waters. Tattersall (1951) reported *Metamysidopsis munda* (Zimmer, 1918) from Calcasieu Pass, Louisiana. Băcescu (1969) reviewed the genus *Metamysidopsis* and synonymized Tattersall's *M. munda* with *M. mexicana* Băcescu, 1969. An examination of Tattersall's material from Calcasieu Pass, Louisiana, revealed specimens to be *M. swifti* and not *M. munda* or *M. mexicana*. Specimens identified as *M. mexicana* from Mullet Key, off Tampa, Florida, obtained from the U.S. National Museum, were also examined and found to be *M. swifti*; however, the antennal scale and peduncle were of the size and proportions similar to *M. mexicana*. Of the hundreds of specimens examined from the northern Gulf, none have been identifiable to either *M. mexicana* or *M. munda*. We therefore believe that neither *M. mexicana* nor *M. munda* has been reported reliably from the coastal waters of the northern Gulf.

**Length** — Adult males to 4.8 mm and females to 5.5 mm.

**Ecology** — Upper mesohaline, abundant in surf zone.

#### *BATHYMYDIS RENOCULATA* TATTERSALL, 1951

##### *Description*

**Carapace** — Anterior dorsal margin a well-developed triangular rostral plate, apex pointed and extending well between eyes. Posterior dorsal margin concave, exposing eighth and part of seventh thoracic segments (Figure 2i).

**Antennal peduncle and scale** — Scale about 7.5 times as long as wide at its midlength, with distal suture, setose along both margins, lacking lateral tooth. Third segment of peduncle about 0.6 times as long as second segment; entire peduncle slightly more than one half the length of scale (Figure 3i).

**Uropods** — Exopods about 1.6 times as long as telson and about 1.3 times as long as endopods, very slender in appearance, setose along both margins. Endopods about 1.2 times as long as telson, bearing a row of about 33 equally spaced spines that gradually increase in length from area of statocyst to apex, both inner and outer margins setose (Figure 4i).

**Telson** — About twice as long as maximum width, lateral margins armed with about 25 to 40 long spines, more concentrated along the distal margins; each apical lobe armed with 2 spines slightly longer than those along lateral margins. Terminal cleft deep, about one fifth of the total length of telson, bearing about 30 short spines proximally and 3 pairs of larger spines distally (Figure 5i).

**Other characters** — Pleopods of males biramous, endopod of first pleopod rudimentary, exopod of fourth pleopod 8-segmented and about twice as long as endopod, distal margin of sixth and seventh segments of exopod each bearing a long plumose seta, eighth segment reduced and bearing 1 long and 1 short simple seta.

**Length** — Adult males and females to 9.0 mm.

**Ecology** — Polyhaline, hypoplanktonic.

#### *MYSIDOPSIS BIGELOWI* TATTERSALL, 1926

##### *Description*

**Carapace** — Anterior dorsal margin a short, bluntly pointed rostral plate partly covering and extending slightly beyond base of eyestalks. Posterior dorsal margin slightly concave, loose, exposing eighth and part of seventh thoracic segments (Figure 2j).

**Antennal peduncle and scale** — Scale about 6.5 times as long as wide at its midlength, bearing setae along both margins, without lateral tooth or distal suture. Third segment of peduncle about 0.6 times as long as second segment; entire peduncle about 0.6 times as long as scale (Figure 3j).

**Uropods** — Exopods about twice as long as telson and about 1.2 times as long as endopods, setose along both margins. A row of 4 or 5 graduated spines present along inner margin of endopod medial to statocyst, proximal spine being shortest and distal spine longest (Figure 4j).

**Telson** — Broadly linguiform, without terminal cleft or emargination, length about 1.6 times maximum width; lateral margins slightly concave, bearing 10 to 13 short, stout, evenly spaced spines; apex rounded, bearing 3 pairs of widely spaced spines, the inner 2 pairs subequal in length and much longer than outer pair (Figure 5j).

**Other characters** — Endopod of second thoracic limb greatly enlarged. Pleopods of males biramous, endopod of pleopod 1 rudimentary, exopod of pleopod 4 bearing a long barbed seta on the terminal seventh segment. All pleopods of females reduced to uniramous plates.

**Remarks** — *Mysidopsis bigelowi* is easily distinguished from the other species of *Mysidopsis* in the present key by the greatly enlarged endopod of the second thoracic limb.

**Length** — Adult males and females to 7.0 mm.

**Ecology** — Polyhaline, hypoplanktonic, abundant in offshore waters.

#### *MYSIDOPSIS FURCA* BOWMAN, 1957

##### *Description*

**Carapace** — Anterior dorsal margin a bluntly triangular rostral plate extending only to base of eyestalks. Posterior dorsal margin loose, concave, exposing eighth and part of seventh thoracic segments (Figure 2k).

**Antennal peduncle and scale** — Scale about 4.7 times as long as wide at its midlength, bearing setae along both margins, without lateral tooth, faint suture present on distal tip. Third segment of peduncle about 0.6 times as long as second segment; entire peduncle about 0.6 times as long as scale (Figure 3k).

**Uropods** — Exopods about 1.2 times as long as endopods, slightly less than 1.5 times as long as telson in males, more than 1.5 times as long as telson in females. Endopods with

row of 30 to 40 strong spines of variable length along inner margin extending from statocyst to near distal tip. Endopods and exopods bearing setae along both margins (Figure 4k).

**Telson** — Showing sexual dimorphism. Female telson very distinctive, resembling a pitch fork; length about 1.2 times as long as maximum width; lateral margins concave, bearing 7 to 10 spines; apex armed with 2 pairs of long heavy spines, outer pair curved inward and inner pair almost straight (Figure 5l). Male telson about 1.4 times as long as maximum width; lateral margins less concave than in females and bearing 10 to 12 spines; apex with 2 pairs of straight spines, outer pair about one-half length of inner pair (Figure 5k). Telson with slight emargination between the inner pair of spines in both males and females.

**Other characters** — Pleopods of males biramous, endopod of pleopod 1 rudimentary; endopod and exopod of fourth pleopod of males subequal in length, exopod 7-segmented, bearing a long barbed seta on distal tip. All pleopods of females reduced to uniramous plates.

**Remarks** — *Mysidopsis furca* is easily distinguished from the other species of *Mysidopsis* in the present key by the armature and emargination of the distal end of the telson as well as by the large number and size of the spines on the endopods of the uropods. The female telson and uropods agree closely with the descriptions by Bowman (1957) but differ from those of Brattegard (1969), who apparently illustrated immature specimens.

**Length** — Adult males and females to 6.0 mm.

**Ecology** — Polyhaline, hypoplanktonic.

#### MYSIDOPSIS BAHIA MOLENOCK, 1969

##### Description

**Carapace** — Anterior dorsal margin a broadly rounded rostral plate extending to base of eyestalks. Posterior dorsal margin loose, slightly concave, exposing eighth thoracic segment (Figure 2l).

**Antennal peduncle and scale** — Scale about 7.0 times as long as wide at its midlength, bearing setae along both margins, without distal suture or lateral tooth. Third segment of peduncle about 0.7 times as long as second segment; entire peduncle slightly less than one-half total length of scale (Figure 3l).

**Uropods** — Exopod about 1.8 times as long as telson and about 1.3 times as long as endopods, bearing setae along both margins. Endopod about 1.2 times as long as telson, bearing setae along each margin, with 2 or 3 (rarely 4) slender spines medial and slightly posterior to statocyst (Figure 4l).

**Telson** — Linguiform, without terminal cleft or emargination, length about 1.7 times maximum width; lateral margins slightly concave, bearing 10 to 21 spines; apex broadly rounded, bearing 4 to 6 pairs of closely set spines abruptly increasing in length from lateral-most pair to medial pair (Figure 5m).

**Other characters** — All pleopods of males biramous, endopod of pleopod 1 rudimentary, fourth pleopod bearing a long barbed seta on tip of 7-segmented exopod. All pleopods of females reduced to uniramous plates.

**Remarks** — Many specimens of *M. bahia* examined from the northern Gulf displayed variable concentrations of heavy black pigmentation along the entire ventral margin in addition to the normal ventral abdominal pigments characteristic of other species of *Mysidopsis*.

**Length** — Adult males to 7.0 mm and females to 8.0 mm.

**Ecology** — Estuarine, commonly occurring in salinities above 15.0 ‰, rarely taken in salinities as low as 2.0 ‰, often collected with *M. almyra*.

#### MYSIDOPSIS ALMYRA BOWMAN, 1964

##### Description

**Carapace** — Anterior dorsal margin a broadly rounded rostral plate, not produced between eyestalks. Posterior dorsal margin loose, concave, exposing eighth and part of seventh thoracic segments (Figure 2m).

**Antennal peduncle and scale** — Scale about 7.0 times as long as wide at its midlength, bearing setae along both margins, without distal suture or lateral tooth. Third segment of peduncle about 0.7 times as long as second segment; entire peduncle slightly less than one-half length of scale (Figure 3m).

**Uropods** — Exopods about 2.0 times as long as telson and 1.3 times as long as endopods, bearing setae along both margins. Endopods about 1.2 times as long as telson, bearing setae along both margins and 1 spine just posterior and medial to statocyst (Figure 4m).

**Telson** — Linguiform, without terminal cleft or emargination, length about 1.6 times maximum width; lateral margins slightly concave, bearing 15 to 24 spines of variable size, but generally increasing in length distally; apex rounded, bearing 6 to 8 pairs of spines gradually increasing in length from lateral-most pair to medial pair (Figure 5n).

**Other characters** — Pleopods of males biramous, endopod of pleopod 1 rudimentary, fourth pleopod bearing a long barbed seta on distal end of 7-segmented exopod. All pleopods of females reduced to uniramous plates.

**Remarks** — This species superficially resembles *M. bahia*, therefore careful determination of the spination of the inner ramous of the uropod is necessary.

**Length** — Adult males to 7.5 mm and females to 10.0 mm.

**Ecology** — Dominant mysid in northern Gulf estuaries, common in mesohaline to near fresh conditions, found over a salinity range of 0.0 to 32.0 ‰, an important food item for local juvenile demersal fishes.

#### BRASILOMYSIS CASTROI BĂCESCU, 1968

##### Description

**Carapace** — Anterior dorsal margin a large, triangular



bluntly pointed rostral plate extending well beyond eyestalks. Posterior dorsal margin concave, loose, exposing eighth and part of seventh thoracic segments (Figure 2n).

*Antennal peduncle and scale* — Scale very slender, about 15.0 times as long as wide at its midlength, suture separating distal one seventh, setose along both margins, lacking lateral tooth. Second segment of peduncle about 2.5 times as long as third segment; entire peduncle about 0.6 times as long as scale. Sympod with minute tooth on lateral margin (Figure 3n).

*Uropods* — Exopod about 1.25 times as long as telson and 1.2 times as long as endopods, outer margin concave, both margins setose. Endopod with large statocyst, setose along both margins, lacking spines along inner margin (Figure 4n).

*Telson* — Linguiform, very distinctive in appearance, without terminal notch; proximal one half of lateral margins armed with about 15 widely spaced spines becoming longer and more concentrated distally, distal one half armed with 40 to 60 (total both margins) closely set spatulate spines which are continuous around apex (Figure 5o).

*Other characters* — Eighth thoracic limb always directed backward, endopods well-developed with proximal two thirds of merus (longest segment) armed with 4 to 5 straight spines along outer margin and a row of 8 to 12 strong curved spines along inner, lower margin. First male pleopod uniramous, all others biramous, exopod of fourth pleopod with a long barbed seta extending from terminal segment. All pleopods of females reduced to uniramous plates. Entire body form very slender in appearance.

*Length* — Adult males and females to 8.0 mm.

*Ecology* — Upper mesohaline to polyhaline, hypoplanktonic.

#### *HETEROMYSIS FORMOSA* S. I. SMITH, 1873

##### *Description*

*Carapace* — Anterior dorsal margin broadly triangular, a bluntly pointed rostral plate covering base of eyestalks. Posterior dorsal margin deeply concave, exposing eighth and part of seventh thoracic segments (Figure 2o).

*Antennal peduncle and scale* — Scale short, broadly rounded inner margin, about 2.6 times as long as wide at its midlength, setose along both margins, without suture or lateral tooth. Third segment of peduncle about 0.8 times as long as second segment; entire peduncle about equal in length to scale. Outer distal corner of sympod with a small tooth (Figure 3o).

*Uropods* — Exopods broadly rounded, slightly longer than endopods and telson, setose along both margins. Endopods about equal in length to telson, bearing a row of 16 to 19 spines of equal size and spacing along inner margins, both inner and outer margins setose (Figure 4o).

*Telson* — About 1.6 times as long as maximum width; lateral margins nearly straight, devoid of spines along

proximal half, distal half bearing 10 to 18 spines of equal size and spacing; each apical lobe bearing 1 large spine. Terminal cleft deep and broad, containing a total of 16 to 30 laminae (Figure 5p).

*Other characters* — Endopod of third thoracic limb (males and females) with carpus and propodus fused to form a long undivided segment armed with 3 pairs of strong spines on the inner distal margin. Pleopods of both males and females rudimentary.

*Ecology* — Polyhaline, hypoplanktonic.

#### *TAPHROMYSIS LOUISIANAE* BANNER, 1953

##### *Description*

*Carapace* — Rostral plate short and bluntly rounded, barely reaching base of eyestalks. Anterior margin of carapace with a small acute tooth just below level of eyestalk. Posterior dorsal margin slightly concave, loose, exposing eighth and part of seventh thoracic segments (Figure 2p).

*Antennal peduncle and scale* — Scale about 5.0 times as long as wide at its midlength, bearing setae along both margins, distal tip demarked by a faint suture, lacking lateral tooth. Third segment of peduncle about 0.7 times as long as second segment, distal margin reaching just beyond middle of scale (Figure 3p).

*Uropods* — Exopods about twice as long as telson, bearing setae along both margins. Endopods about 0.8 times as long as exopods, setose along both margins and bearing 1 long spine just posterior to statocyst along medial margin (Figure 4p).

*Telson* — Short, broad and distally emarginate; lateral margins slightly concave, bearing 10 to 12 spines along each side. Terminal emargination U-shaped, armed with 40 or more laminae along entire distal margin (Figure 5q).

*Other characters* — First and second pleopods of males rudimentary; exopod of fourth pleopod 6-segmented, distal end bearing a terminal and subterminal seta forming a "pincer-like" structure; terminal seta spinous, tip acute. All pleopods of females reduced to uniramous plates.

*Remarks* — The above diagnosis differs from the original description of *T. louisianae* by Banner (1953) who did not report the presence of the spine near the statocyst.

*Length* — Adult males and females to 9.0 mm.

*Ecology* — Estuarine, not collected in salinities above 2.0 ‰, common in freshwater ditches.

#### *TAPHROMYSIS BOWMANI* BĂCĂESCU, 1961

##### *Description*

*Carapace* — Rostral plate short and bluntly rounded, barely reaching base of eyestalks. Anterior margin of carapace devoid of spines. Posterior margin of carapace concave, loose, exposing seventh and eighth thoracic segments (Figure 2q).

**Antennal peduncle and scale** — Scale about 4.2 times as long as wide at its midlength, bearing setae along both margins, distal tip demarked by a faint suture, devoid of lateral tooth. Third segment of peduncle about 0.7 times as long as second segment; entire peduncle about two thirds of scale (Figure 3q).

**Uropods** — Exopods about 1.5 times as long as telson and slightly longer than endopods. Both endopods and exopods bearing setae along both margins. Endopods bearing 1 long spine located medial and posterior to statocyst (Figure 4q).

**Telson** — Short, broad and distally emarginate; lateral margins bearing 8 to 10 spines on each side, distal one half straight. Terminal emargination broadly V-shaped and armed with 30 or less laminae (spine-like projections) along entire distal margin (Figure 5r).

**Other characters** — Pleopods 1 and 2 of males rudimentary; exopod of fourth pleopod 6-segmented, distal end bearing a terminal and subterminal seta forming a "pincer-like" structure; terminal seta of outer ramous bifid at its tip as opposed to acute in *T. louisianae*. All pleopods of females reduced to uniramous plates.

**Remarks** — Many of the specimens from Mississippi show heavy pigmentation on the dorsal surface. Specimens of *T. bowmani* obtained from Destin, Florida, agree in all details with the original description by Băcescu (1961) and Brattegard (1970); however, material taken east of Mobile Bay showed considerable variation. The telson of *T. bowmani* from St. Louis Bay, Mississippi, (Figure 5s) closely resembles that of *T. louisianae* in having slightly

concave lateral margins which bear 10 or more spines and a U-shaped emargination containing 30 to 36 laminae. The size and proportions of the antennal scale and peduncle also more closely resemble *T. louisianae*. These specimens lack the distinctive spine on the anterior carapace of *T. louisianae* and the mouthparts, thoracic limbs and male fourth pleopod are all clearly closer to *T. bowmani*. The spine on the inner margin of the endopod of the uropod is of a size and position consistent with *T. bowmani* (Figure 4r). Specimens of both *T. louisianae* and this "intermediate" form of *T. bowmani* have occurred simultaneously in samples from Davis Bayou and St. Louis Bay, Mississippi, and Lake Pontchartrain, Louisiana. The senior author is currently investigating the possibility that this "intermediate" form represents a hybrid of the two species, or yet an undescribed third species of *Taphromysis*.

**Length** — Adult males to 8.5 mm and females to 9.0 mm.

**Ecology** — Estuarine, found over a much wider range of salinity than the closely related species, *T. louisianae*.

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